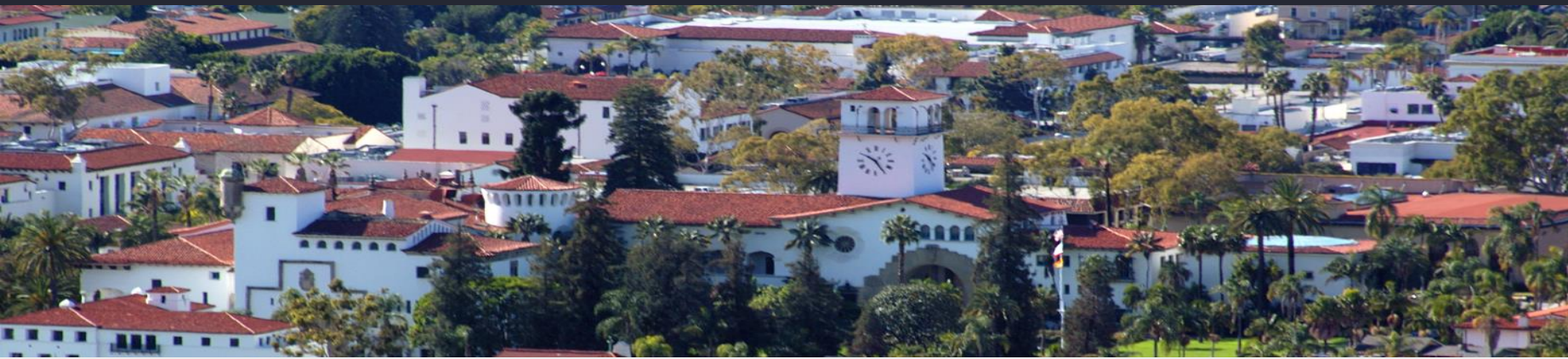


COMMUNITY DEVELOPMENT DEPARTMENT

SEA LEVEL RISE ADAPTATION PLAN SUBCOMMITTEE

November 13, 2018 Subcommittee Meeting #6

Meeting Topics

- Meeting Schedule
- Subcommittee comments on the Draft Vulnerability Assessment
- Additional information on bluff erosion at Sea Ledge Lane
- Adaptation Plan process
- Public outreach information
- General types of adaptation strategies
- Reporting to Commissions and Council

MEETING SCHEDULE

Meeting Schedule

- **December 11th:** Adaptation Strategies and El Estero Wastewater Treatment Plant
- **December 18th:** Final comments on guiding principles, adaptation strategies, and plan scope.
- **2019:** Every second and fourth Tuesday of the month at 10:00am

A. SUBCOMMITTEE COMMENTS

Draft Sea Level Rise Vulnerability Assessment

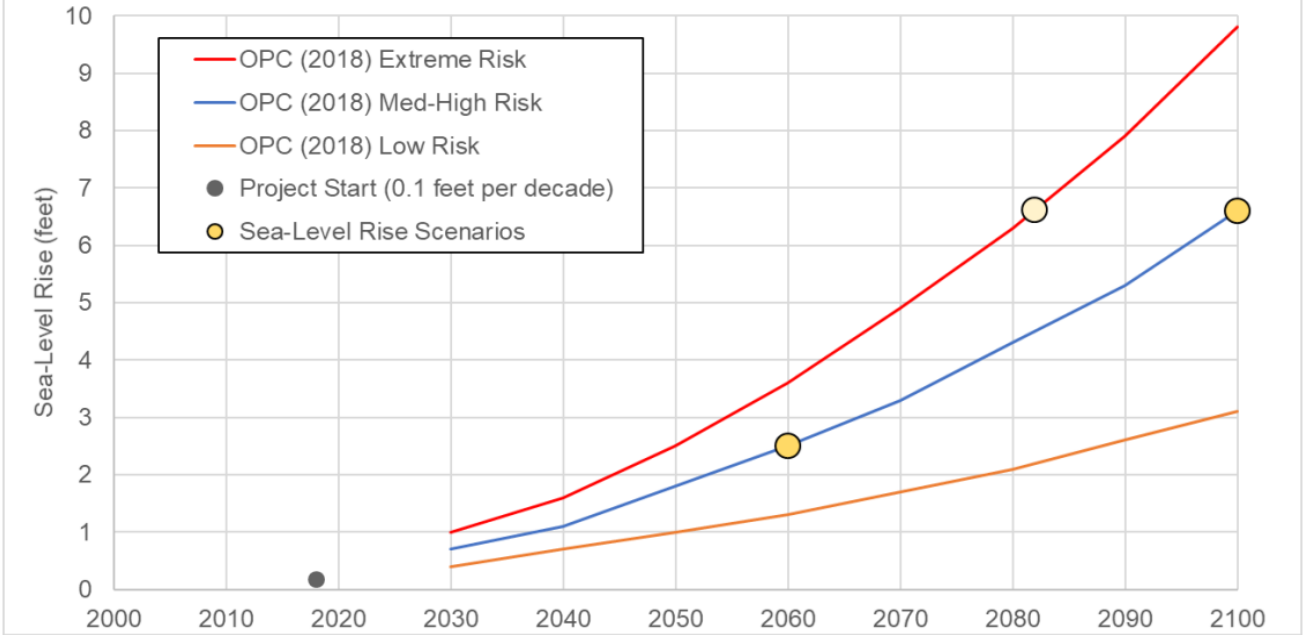
Major Questions/ Comments Received to Date

- How will the H++ Scenario be used
- What is a “coastal storm” versus a regular storm
- Why is there beach loss in the low lying area given this is a “let it go scenario” where beaches could migrate inland
- Need to simplify and rewrite Section 4 Asset Exposure Analysis
- Cabrillo Pavilion and other major recreational assets needs more discussion
- The document needs to designate critical facilities

Major Questions/ Comments Received to Date

- Replacement costs of public facilities seem low
- Sea Ledge Lane area not shown
- Will a hybrid recommendation be assessed in the Adaptation Plan?

Use of the H++ Scenario



City of Santa Barbara Sea-Level Rise Adaptation Plan for the LCP Update / D171018.00

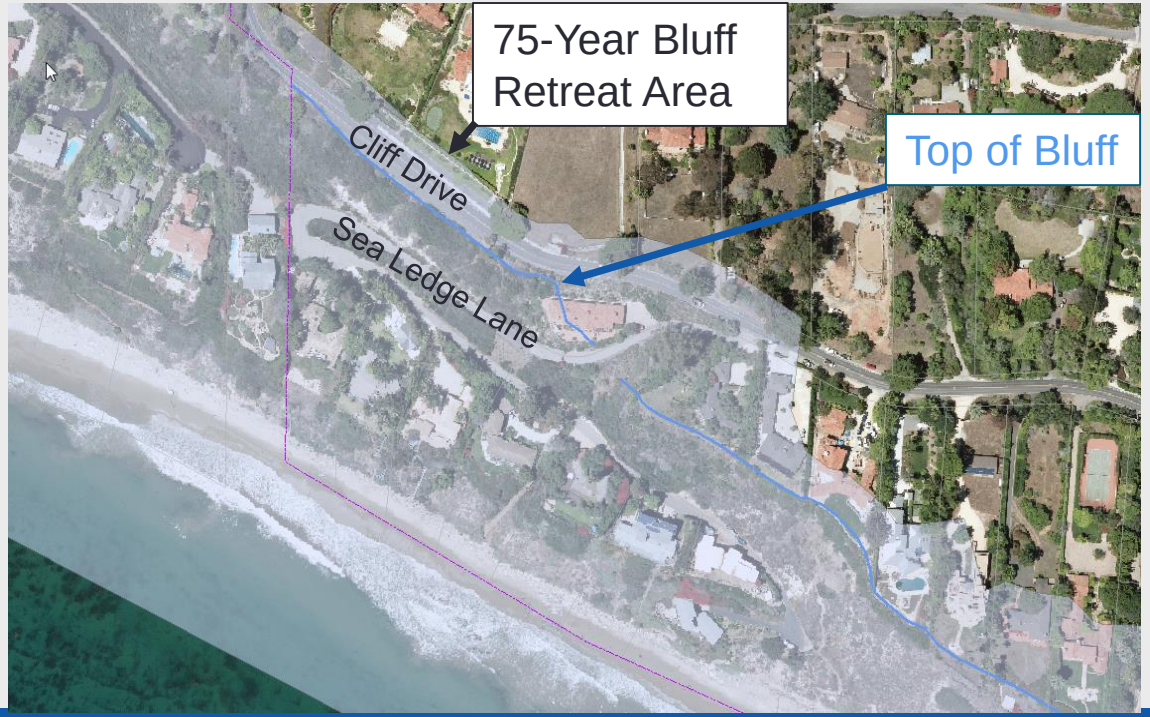
SOURCE: OPC 2018

Figure 5

Other Comments and Questions?

B. SEA LEDGE LANE BLUFF EROSION

Existing Bluff Hazard Area



Proposed Bluff Hazard Area

Proposed Bluff Hazard Area

C. ADAPTATION PLAN PROCESS

November 2018 – January 2019

- Draft Vulnerability Assessment
  - *November 13th Subcommittee comments*
  - *November 26th public release*
  - *December 5th public workshop*
  - *December 5th meeting with CCC staff*
  - *Mid December ESA revises*

November 2018 – January 2019

- Adaptation Planning
  - *December 11th ESA presents adaptation strategies to subcommittee*
  - *December 18th Subcommittee gives comments on guiding principles, adaptation strategies, and scope of analysis*

November 2018 – January 2019

- Additional Information Gathering:
  - *Impacts to El Estero Wastewater Treatment Plant and wastewater system*
  - *Impacts to Desalination and Recycled Water Plants*
  - *Impacts to Harbor*
  - *Designation of critical facilities*

February 2019 – May 2019

- Revised economic and fiscal Impact baseline
- Draft Adaptation Plan including Economic and Fiscal Impacts Study.
  - *Internal review*
  - *Subcommittee initial review*
  - *Public release, comment period, and workshop*
  - *Stakeholder mailing and meetings*

June 2019 – August 2019

- *CCC comments*
- *Subcommittee recommendation*
- *Board and Commission review*
- *City Council review.*
- *LCP Amendment process initiated.*

C. PUBLIC OUTREACH INFORMATION

Public Outreach in November/December

- Document Release November 26th
- Press Release November 26th
- Notifications: Email to LCP list, LDT bulletin, City News, and website
- Stakeholder outreach
- December 5th Public Workshop (6:00pm-8:00pm Louise Lowry Davis Center)

Contents of Press Release and Website

- Location of draft document
- Public Workshop information
- Description of overall plan and where we are in process
- Sea level rise: *While we have some time until the City experiences the severe impacts of sea level rise, it is crucial we prepare now.*
- Basic takeaways of Vulnerability Assessment
- General types of adaptation strategies that will be considered and next steps

Takeaways from Vulnerability Assessment

- The following are physical effects of sea level rise on the City that are projected to occur without any adaptation:

  - ***Waterfront and low lying areas of downtown:*** Impacts are projected to be mostly limited to the area seaward of Cabrillo Blvd through the year 2060. By 2100, however, flooding from regular high tides and coastal storms is expected to extend north of Cabrillo Blvd to Highway 101. Low lying areas north of Highway 101 that currently flood during extreme storms will see a higher frequency of flooding during storms.

Takeaways from Vulnerability Assessment

- ***Beaches:*** By 2060 most of the sandy beaches in the City's westerly coastal bluff areas are likely to be lost from beach erosion. By 2100, all of the sandy beaches in the westerly coastal bluff areas and approximately half of the sandy beaches in the low lying Waterfront area could be lost.

- ***Coastal bluff areas:*** Coastal bluff erosion rates are expected to increase by 40% by 2060 and 140% by 2100. The increased erosion rates will threaten bluff top infrastructure, roads, and private and public development. major reconstruction.

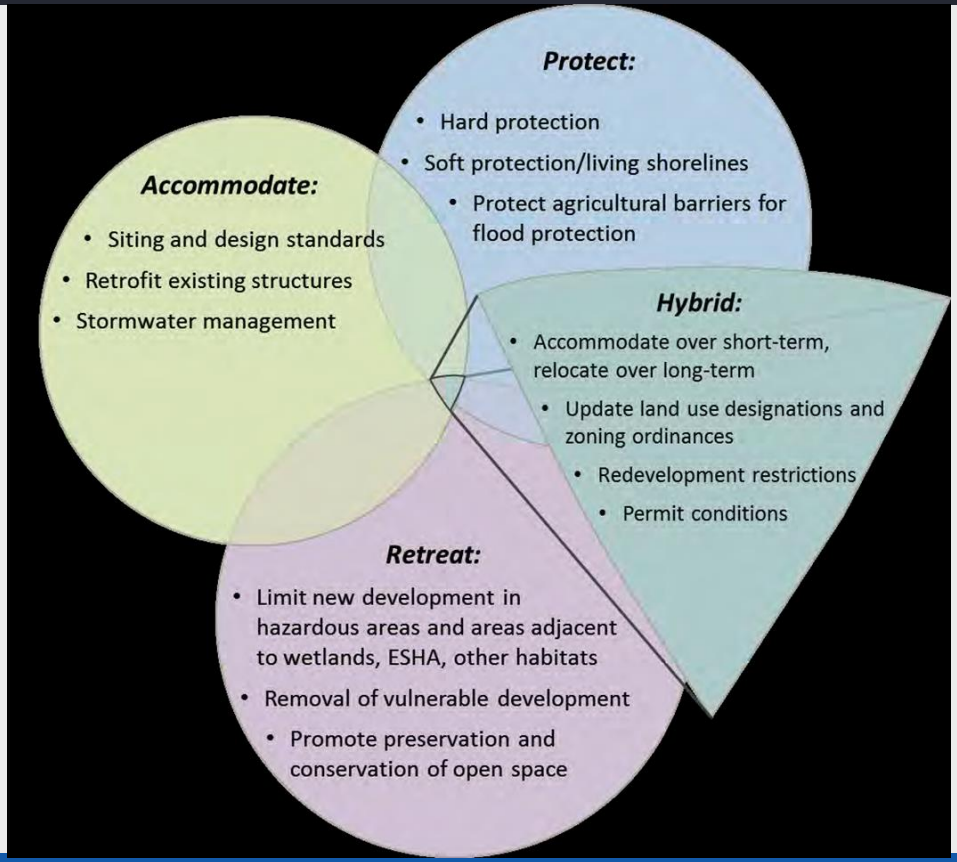
Takeaways from Vulnerability Assessment

- ***Major infrastructure:*** By 2060 portions of the wastewater system could be affected by tidal inundation and storm flooding. By 2100 El Estero Wastewater Treatment Plant is likely to be permanently inoperable as currently designed. Most major streets in the coastal area are not likely to be significantly impacted by 2060. However, by 2100, portions of Cabrillo Blvd, Shoreline Drive, Cliff Drive, and Highway 101 could be impacted by erosion, tidal inundation, or storm flooding.

- ***Harbor and Stearns Wharf:*** By 2060 the effects of sea level rise could impede some harbor functions and storm waves would likely significantly impact Stearns Wharf. By 2100 the Harbor is expected to be unusable without major reconstruction.

D. GENERAL TYPES OF ADAPTATION STRATEGIES

Adaptation Strategies



Protection Strategies

Employ some sort of structure or measure to defend development in its current location without changes to the development itself

- Seawalls and revetments
- Groins
- Breakwater reconstruction
- Tide gate reconstruction
- Beach nourishment

Photo Credit: Kelsey Ducklow

Accommodation Strategies

Employ methods that modify existing development or design new development to decrease hazard risks and increase resiliency

- Elevating structures
- Retrofits
- Repurposing built areas
- Building structures that can be moved
- Raising overall grades

Accommodation Strategies (cont.)

- Flood retention basins
- New pump systems and stations
- New designs of critical facilities
- Raising wharf and harbor

Retreat Strategies

Relocate or remove existing development out of hazard areas and limit the construction of new development in vulnerable areas

- Relocation of structures
- Removal of structures
- Development setbacks
- Various types of programs: Zoning, acquisition and buy-out programs, transfer of development rights, etc.

Hybrid Strategies

Combinations of other strategies at the same time or changing over time

- Accommodate over short-term, relocate over long-term
- Retreat in short-term until reaches critical infrastructure then protect in long-term.
- Redevelopment restrictions

REPORTING TO COMMISSIONS AND COUNCIL

ADJOURNMENT